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ABSTRACT

Intended for teachers seeking computer training or persons responsible for such training, this paper presents a list of computer competencies for reading teachers. The first section of the paper lists the beginning level competencies, which require very little computer knowledge and are sufficient for using instructional software in reading classrooms. The competencies listed include running, stopping, and restarting a computer program, and planning reading lessons that include computer use for instruction. The second part of the paper lists the intermediate competencies, which require slightly more knowledge and are needed to create and retrieve computer files for customized lessons and clerical help. The list includes using instructional computer programs that require teacher-entered, saved, and retrieved files, and using computer software to print out instructional materials. The last part of the paper lists the advanced level competencies, which require more extensive computer training or self-study and are necessary to create original computer programs or teach programing to students as a reading activity. This list includes using an authoring system to create original computer instruction and assessment programs, and creating simple programs in the BASIC programing language. (HTH)

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COMPUTER COMPETENCIES FOR READING TEACHERS

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Computer Competencies for Reading Teachers

Now that microcomputers are commonplace, many teachers are seeking the training necessary to make the best use of the technology in their classrooms. Colleges of education are scrambling to offer a variety of new courses, and inservice directors are packaging workshops for local school districts. What kind of training is important for classroom and clinical reading teachers?

What follows is a list of computer competencies for reading teachers. It is intended for teachers seeking computer training or persons responsible for such training. The list is divided into three competency levels. Beginning competencies require very little computer knowledge and are sufficient for using instructional software in reading classrooms. Intermediate competencies require slightly more knowledge and are needed to create and retrive computer files for customized lessons and clerical help. Advanced competencies require more extensive computer training or self-study and are necessary to create original computer programs or teach programming to students as a reading activity.

BEGINNING COMPETENCIES:

THE READING TEACHER SHOULD BE ABLE TO--

--hook-up and turn on a microcomputer. This competency includes connecting peripherals (disk drive, printer, monitor, game controls) to the computer, inserting all 110 volt AC plugs into wall sockets, and flipping on/off switches. This competency should not intimidate teachers who for years have operated all types of electronic equipment. For most teachers,

a short demonstration or an simple explanation from a computer manual should suffice. Teachers will not always use the skill of connecting peripherals. Once connected, peripherals are usually left attached to the computer. However, when a teacher unexpectedly finds the equipment in disarray, this competency can save delay and anxiety.

--run, stop, and restart a computer program. Most uses of the computer involve running computer programs. Usually this competency involves turning the microcomputer on or off with a diskette in a disk drive. Occassionally it may involve typing one or two easily-learned computer commands. This is a competency that teachers readily learn and quickly teach to their students.

--evaluate and select computer programs (software) suitable for reading instruction. Programs are what make a computer an instructional "anything" machine. A recent tally showed 19 sources of 244 reading software items covering 45 major areas of reading (Wedman, 1983). Wise selection of instructional software is like wise selection of any instructional material. Teachers must first know children and know instructional needs before selecting programs for specific instructional situations. This competency applies knowledge acquired from a teacher's entire training and experience and cannot be met by an isolated training session. A training session can only provide teachers with standards of software selection, exposure to a variety of software, and information about software selection resources.

--plan reading lessons that include computer use for instruction. This is another competency that is not isolated from a teacher's entire training. This competency uses a teacher's ability to diagnose and place students in an instructional sequence that achieves progress. Computer use becomes an option in the instructional sequence. Often, the only new

element of a lesson involving computer use is the inclusion of a plan for rotating limited computer equipment among students.

--integrate parents into the computer aspects of a reading program. Reading teachers know the value of establishing parent partnerships with the reading program. The techniques that work well with any change in a reading program also work well with the introduction of computers into the reading program. These include parent contact with the new program through an open house, classroom visits, a program fair, or parent workshop; and written communication to parents through newsletters, booklets, or samples of student work.

INTERMEDIATE COMPETENCIES:

THE READING TEACHER SHOULD BE ABLE TO--

--use instructional computer programs that require teacher-entered, saved, and retrived files. This competency allows a teacher to use instructional software that can be made specific to a lesson. An example would be a computer vocabulary game that uses words and definitions that a teacher provides from a specific reading lessor. Most such software provides teachers with easy-to-follow directions for creating files. Often the instructions will even appear on the monitor of the computer when a teacher runs such a program. The key to achieving this competency is more in the teacher's confidence to follow the computer instructions, than in actual knowledge of computer operation.

--use computer software to print-out instructional materials. Computers can help teachers create reproduceable, easily-revised crossword puzzles, practice sheets, and word games. This competency is similar to the previous competency except the teacher produces a customized paper activity rather than a customized computer activity. To achieve this competency, teachers must run a program designed to create such

materials. The program usually gives the teacher directions for creating a computer file of words or practice items, uses the teacher file to create the instructional material, and finally asks for printer information to generate a reproduceable paper copy of the material. Teachers will need to know the type of printer used, how the printer is attached to the computer, and how to activate the printer.

--use computer classroom management systems to make instructional decisions. Usually a computerized management system includes criterion referenced tests that students take on machine readable sheets or directly at the computer keyboard. The tests are scored and results processed by the computer. Teachers receive a computer-generated summary that may include diagnosis of problems and recommendations for instruction. Like the previous two competencies, this competency requires more computer confidence than computer know-how to achieve. Teachers will need to follow directions from software manuals or from a computer screen to create student files and generate desired information. Sometimes a management system will provide paper print-outs of information. Teachers will then need to know the same printer information as required by the previous competency. The actual use of the computer-generated information will depend on a teacher's ability to manage individualized instruction and select appropriate instructional materials.

--use a word processor to enter, edit, save, and print-out text. This competency requires the ability to run the word processing program, type text, and follow instructions from the monitor or the software manual to edit, save, and print-out the text. Reading teachers can use word processors for any typed text, but the most talked-about use is for recording language experience stories. Instead of recording stories on charts, the teacher records the story by typing at the computer keyboard.

Children see their story appear on the computer monitor. While the children watch, the teacher can correct or change anything the children wish. When the children are satisfied with their story the teacher can immediately produce paper copies for class booklets or reading practice. The computer saves the stories as files that can be reused, continued, or changed. As children progress, some teachers teach children to use word processors. Word processors vary from simple to complex. The simple word processors, even those designed for children, are sufficient for most classroom use. Many teachers can learn to use a simple word processor in one or two short practice sessions.

ADVANCED COMPETENCIES:

THE READING TEACHER SHOULD BE ABLE TO--

--use an authoring system to create original computer instructional and assesment programs. An authoring system simplifies programming so that a teacher can create original software with little or no programming background. A frequent advantage of a teacher-produced program over a commercially-produced program is its specificity to an instructional need. This competency requires considerably more time, interest, and patience than any of the beginning or intermediate competencies. Although the authoring system simplifies and accelerates programming, a teacher may question the time and skill involved to produce even simple instructional programs. This competency is helpful, but not necessary for every teacher that uses a computer. It is a competency for teachers that have an interest in software development and/or released time for programming projects.

--create, read, and debug simple programs in the BASIC programming language. Most microcomputers are sold with the BASIC programming language. A recent survey of 1120 schools, revealed that 98 percent of

schools teaching programming, used BASIC as the programming language (Becker, 1982). With this competency, a reading teacher can teach programming as a reading-improvement activity. When children program, they use reading, writing, and spelling in ways that require accuracy and repetition. Children use comprehension skills such as predicting outcomes, sequencing, organizing, perceiving relationships, and attending to details. Like the previous competency, this competency involves considerable self-study and instruction to achieve. The competency is not necessary for every reading teacher who uses computers; however, it does enhance a teacher's feeling of control over the computer, as well as allow more complete and flexible use of the computer in the classroom.

Reading teachers who possess most of the above competencies will be capable of creatively using a computer to enhance children's learning and simplify teaching tasks. Although the computer components of the competencies are likely new to teachers, teachers should be reassured to find many of the competencies build on total reading training and experience. Computers are not undermining or drastically changing sound reading practices. Reading teachers can welcome the computer as an exciting new tool that offers much help for the time invested in the

Wedman, Judy. "Reading Software: What's Out There." Language Arts, vol. 60(April, 1983), pp. 516-17.

Becker, Henry Jay. "Microcomputers in the Classroom: Dreams and Realities." CSOS Report No. 319, John Hopkins University, March, 1982.